

CLAIMS

1. A carbonaceous material for forming an electrically conductive composition, comprising a vapor grown carbon fiber, 5 each fiber filament of the carbon fiber containing a hollow space along the filament in its interior and having a multi-layer structure, an outer diameter of 2 to 500 nm and an aspect ratio of 10 to 15,000, and graphitic particles and/or amorphous carbon particles, wherein the amount of the vapor 10 grown carbon fiber is 10 to 90 mass%, the amount of the graphitic particles is 0 to 65 mass%, and the amount of the amorphous carbon particles is 0 to 35 mass%.
2. The carbonaceous material for forming an electrically 15 conductive composition according to claim 1, wherein the vapor grown carbon fiber is the carbon fiber containing boron in an amount of 0.01 to 5 mass%, and the amount of the carbon fiber in the carbonaceous material is at least 20 mass%.
3. The carbonaceous material for forming an electrically 20 conductive composition according to claim 1, wherein the vapor grown carbon fiber contains a branched, vapor grown carbon fiber.
4. The carbonaceous material for forming an electrically 25 conductive composition according to claim 1, wherein the vapor grown carbon fiber contains a nodular, vapor grown carbon fiber.
5. The carbonaceous material for forming an electrically 30 conductive composition according to claim 1, wherein the graphitic particles or the amorphous carbon particles have an average particle size of 0.1 to 100 μm .

6. The carbonaceous material for forming an electrically conductive composition according to claim 1, wherein the graphitic particles or the amorphous carbon particles have
5 been thermally treated at 2,000°C or higher.

7. The carbonaceous material for forming an electrically conductive composition according to claim 1, wherein the graphitic particles contain boron.

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8. The carbonaceous material for forming an electrically conductive composition according to claim 1, wherein the amorphous carbon particles contain boron.

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9. The carbonaceous material for forming an electrically conductive composition according to claim 1 or 8, wherein the amorphous carbon particles are formed of carbon black or glassy carbon.

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10. The carbonaceous material for forming an electrically conductive composition according to claim 9, wherein the carbon black is at least one species selected from the group consisting of oil furnace black, gas black, acetylene black, lamp black, thermal black, channel black and Ketjenblack.

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11. The carbonaceous material for forming an electrically conductive composition according to claim 1, comprising a vapor grown carbon fiber, each fiber filament of the carbon fiber containing a hollow space along the filament in its
30 interior and having a multi-layer structure, an outer diameter of 2 to 500 nm and an aspect ratio of 10 to 15,000, and graphitic particles, and at least one of the carbon fiber and graphitic particles contains boron, wherein the amount of

the vapor grown carbon fiber is 35 to 93 mass% and the amount of the graphitic particles is 7 to 65 mass%.

12. The carbonaceous material for forming an electrically 5 conductive composition according to claim 1, comprising a vapor grown carbon fiber, each fiber filament of the carbon fiber containing a hollow space along the filament in its interior and having a multi-layer structure, an outer diameter of 2 to 500 nm and an aspect ratio of 10 to 15,000, 10 and amorphous carbon particles, and at least one of the carbon fiber and amorphous carbon particles contains boron, wherein the amount of the vapor grown carbon fiber is 65 to 93 mass% and the amount of the amorphous carbon particles is 7 to 35 mass%.

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13. The electrically conductive composition comprising an carbonaceous material as recited in any of claims 1 to 12 and a resin component serving as a binder or a matrix material, and, if desired, a solvent.

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14. The electrically conductive composition according to claim 13, wherein, when "a mass%", "b mass%" and "c mass%" represent the amounts of the vapor grown carbon fiber, the graphitic particles and the amorphous carbon particles 25 contained in the composition, with the proviso that the solvent being excluded from the composition, respectively, a, b and c satisfy the following relations:

$$5 \leq a + b + c \leq 80, \quad 1 \leq a \leq 60, \quad 1 \leq b \leq 60, \quad \text{and} \quad 1 \leq c \leq 30.$$

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15. A method for producing an electrically conductive composition characterized by adding a resin component and, if desired, a solvent to the carbonaceous material for forming

an electrically conductive composition as recited in any of claims 1 to 12, and kneading the resultant mixture.

16. An electrically conductive coating material

5 characterized by comprising, as an electrically conductive material, an electrically conductive composition as recited in claim 13 or 14.

17. The electrically conductive coating material according

10 to claim 16, which is employed as an electrically conductive paste.

18. An electrically conductive adhesive characterized by

comprising an electrically conductive composition as recited
15 in claim 13 or 14.

19. An electrically conductive coating film characterized

by being formed by use of an electrically conductive coating
material as recited in 18 above.

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20. An electronic part characterized by being formed by use
of an electrically conductive coating material as recited in
claim 16 and/or an electrically conductive adhesive as
recited in claim 18.